CHECKLIST OF THE MARINE FISHES OF KAIKOURA, NEW ZEALAND

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ABSTRACT

One hundred and seventy-nine fish species are recorded from the Kaikoura region on the south Marlborough coast of New Zealand. The diversity of species present is attributable to the wide range of habitats present and the location of Kaikoura in a mixing zone of warm and cold water masses. Two species, *Alepisaurus brevirostris* and *Somniosus* sp., are new records for the New Zealand fish fauna.

INTRODUCTION

During a two-year management study of the Kaikoura set-net fisheries (Francis 1979), a list of the marine fish species of Kaikoura (42°25'S 173°42'E) was compiled. For this purpose, the Kaikoura region was defined as the coastal waters between the Hapuku River (ten km north of Kaikoura Peninsula) and Haumuri Bluffs (22 km south of Kaikoura Peninsula). It was not possible to define the region at its seaward edge because the localities of many museum specimens are recorded simply as "Kaikoura". However, the great majority of specimens would have been collected within 15 km of the shore due to the proximity of the edge of the continental shelf to the shore.

The list of fish species presented below was compiled from four sources:

(1) Personal observations aboard commercial fishing vessels

(2) Personal observations by SCUBA diving to 20 m depth around the Kaikoura Peninsula

(3) Examination of fish specimens held in the collections of the Edward Percival Field Station (EPFS), the Canterbury Museum (CM) and the National Museum of New Zealand (NMNZ)

(4) Literature reports of fish species seen or collected at Kaikoura.

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Some unverified reports of additional species are included also. In each case the species is marked with an asterisk, and the source of the report is given. Catalogue numbers of specimens collected from Kaikoura and held by the above three institutions are shown after each species name in the checklist. Literature reports of fish species from Kaikoura are quoted if the species were not recorded from any of sources 1, 2 or 3 above. The classification used in the checklist follows that of Greenwood *et al.* (1966).

CHECKLIST OF KAIKOURA MARINE FISHES

Myxinidae	*Eptatretus cirrhatus* (Bloch & Schneider) EPFS KA014 (eggs), KA390 (eggs)
	Neomyxine biniplicata (Richardson & Jowett) NMNZ 1010
Hexanchidae	*Heptranchias perlo* (Bonnaterre) EPFS KA322; CM 418
	Notorynchus cepedianus (Peron) EPFS KA502F
	Hexanchus griseus (Bonnaterre) EPFS KA067B (teeth); CM 103
Scyliorhinidae	*Cephaloscyllium isabella* (Bonnaterre) NMNZ 3018
	Halaelurus dawsoni Springer EPFS KA205A
Triakidae	*Galeorhinus australis* (Macleay)
	Mustelus lenticulatus Phillipps EPFS KA502M (embryos)
Proscylliidae	*Gollum attenuatus* (Garrick) Garrick & Paul (in prep.)
Carcharhinidae	*Prionace glauca* (Linnaeus)
Alopiidae	*Alopias vulpinus* (Bonnaterre)
Cetorhinidae	*Cetorhinus maximus* (Gunnerus)
Lamnidae	*Lamna nasus* (Bonnaterre) EPFS KA502N (photo); NMNZ 2609
	* *Isurus oxyrinchus* Rafinesque EPFS K343A (not seen)
	Carcharodon carcharias (Linnaeus) EPFS K606 (photo)
Echinorhinidae	* *Echinorhinus* sp. EPFS Data Record
Oxynotidae	*Oxynotus bruniensis* (Ogilby) EPFS KA328
Squalidae	*Squalus acanthias* Linnaeus EPFS KA847B
	Centroscymnus crepidater (Bocage & Capello) CM 104; NMNZ 2536, 2537, 2538, 2651, 2689
	Centroscymnus owstonii Garman NMNZ 2539, 2652, 2653
	Scymnodon plunketi (Waite) CM 179; NMNZ 1846, 1896, 2635, 2636, 2637, 2656
	Centrophorus squamosus (Bonnaterre) EPFS KA502P; CM 180; NMNZ 1847, 2240, 2256, 2655, 3036

	Etmopterus baxteri Garrick Garrick (1960)
	Etmopterus lucifer Jordan & Snyder EPFS KA499J
	Deania calcea (Lowe) EPFS KA314
Dalatiidae	*Dalatias licha* (Bonnaterre) NMNZ 1906, 2458
	Somniosus sp. CM 107
Torpedinidae	* *Torpedo fairchildi* Hutton EPFS Data Record
Narkidae	*Typhlonarke aysoni* (Hamilton) CM 56; NMNZ 2239
	Typhlonarke tarakea Phillipps CM 58
Rajidae	*Raja nasuta* Banks in Müller & Henle EPFS KA495N
Myliobatidae	*Myliobatis tenuicaudatus* Hector EPFS K805A, KA309, KA317A; CM 432; NMNZ 1910
Chimaeridae	*Hydrolagus novaezealandiae* (Fowler) EPFS KA333, KA334
Rhinochimaeridae	*Rhinochimaera pacifica* (Mitsukuri) EPFS KA502S
Callorhinchidae	*Callorhinchus milii* Bory de St Vincent NMNZ 1432, 1929, 1929A
Congridae	*Bassanago hirsutus* (Castle) EPFS KA275, KA319; NMNZ 2829, 2830, 2665, 5242
	Gnathophis umbrellabia (Whitley) NMNZ 3073
	Conger verreauxi Kaup EPFS K272A; NMNZ 2672
Synaphobranchidae	*Diastobranchus capensis* Barnard EPFS KA490B, KA499R; NMNZ 2508, 2511, 2512, 5241
Simenchelyidae	*Simenchelys parasiticus* Goode & Bean NMNZ 2005
Nemichthyidae	*Nemichthys curvirostris* (Strömman)
Notacanthidae	*Notacanthus sexspinis* Richardson CM 735, 971
Clupeidae	*Sardinops neopilchardus* (Steindachner) Morgans (1966)
	Sprattus antipodum (Hector) EPFS K001A, KA499F; CM 328
Engraulidae	*Engraulis australis* (Shaw) EPFS K001D
Gonostomatidae	*Photichthys argenteus* Hutton CM 735
Sternoptychidae	*Maurolicus muelleri* (Gmelin) EPFS K065A, K167A, K338C
Idiacanthidae	*Idiacanthus fasciola* Peters CM 694
Alepocephalidae	*Bathytroctes antipodiana* Parrott Parrott (1948)
	Alepocephalus australis Barnard NMNZ 4309, 5206
Alepisauridae	*Alepisaurus ferox* Lowe EPFS KA502G; NMNZ 827, 1433, 1830, 3743, 4519, 4957, 5730, 5783, 6065, 7632

	Alepisaurus brevirostris Gibbs EPFS KA474A, KA500; CM 238; NMNZ 2041, 2820, 5310, 7912, 7913
Myctophidae	*Lampanyctodes hectoris* (Günther) EPFS KA261A, KA412
	Lampanyctus australis (Täning) EPFS KA502R
	Lampanyctus intracarius Täning CM 2050
Gonorynchidae	*Gonorhynchus gonorhynchus* (Linnaeus) EPFS K100A, K633B; CM 2089; NMNZ 1289
Gobiesocidae	*Dellichthys morelandi* Briggs NMNZ 4819
	Trachelochismus pinnulatus (Forster) EPFS K007G, K276B, K513J, K514F, K515F, K534B, K562A, K562B, (eggs and larvae); NMNZ 3956
	Trachelochismus melobesia Phillipps EPFS K276A, K412Y, K515H
	Haplocylix littoreus (Forster)
	Diplocrepis puniceus (Richardson) EPFS K190A, K562C; CM 565
	Gastroscyphus hectoris (Günther) EPFS K410P, K424Q, K515Q, K534A, K579A
Melanocetidae	*Melanocetus johnsonii* Günther EPFS KA287A
Moridae	*Pseudophycis bachus* (Bloch & Schneider) NMNZ 7349
	Pseudophycis breviusculus (Richardson) NMNZ 8031
	Lotella rhacina (Bloch & Schneider) EPFS KA362
	Mora pacifica Waite CM 453, 454, 455; NMNZ 1845, 2004, 2657
	Auchenoceros punctatus (Hutton) EPFS K560A, KA499C
Gadidae	*Gaidropsaras novaezelandiae* (Hector) EPFS K395B, K815A, KA053A; CM 611; NMNZ 4815
Merluccidae	*Macruronus novaezelandiae* (Hector)
	Merluccius australis (Hutton) EPFS KA472A; CM 337; NMNZ 3964, 7348
Ophidiidae	*Genypterus blacodes* (Bloch & Schneider) EPFS KA499Q
Carapidae	*Echiodon rendahli* (Whitley) NMNZ 2802
Zoarcidae	*Melanostigma gelatinosum* Günther EPFS K630A
Macrouridae	*Coelorhynchus australis* (Richardson) EPFS KA499S; NMNZ 1291
	Trachyrhynchus longirostris Günther EPFS KA495L; NMNZ 2003, 2668, 2729, 2882
	Lepidorhynchus denticulatus (Richardson) EPFS KA020 (photo), KA490G, KA499M; CM 778
Exocoetidae	*Hyporhamphus ihi* (Phillipps) EPFS KO57A, K100B, K593A
Scomberesocidae	*Scomberesox saurus* Cuvier & Valenciennes NMNZ 3350
Trachichthyidae	*Paratrachichthys trailli* (Hutton) EPFS K586A; CM 880; NMNZ 759

Berycidae	*Beryx splendens* Lowe EPFS KA312, KA471 *Centroberyx affinis* (Günther) EPFS KA317B
Zeidae	*Zeus australis* Richardson *Zenopsis nebulosus* (Temminck & Schlegel) EPFS KA175C *Cyttus novaezelandiae* (Arthur) EPFS KA175B *Capromimus abbreviatus* (Hector) NMNZ 2074
Oreosomatidae	*Allocyttus* sp.
Trachipteridae	*Trachypterus arcticus* (Brünnich) EPFS K366A, KA038 (photo), KA045, KA313, KA335, KA392; CM 476; NMNZ 5173
Macrorhamphosidae	*Notopogon lilliei* Regan EPFS K588A, KA413, KA490A, KA501A; CM 1971; NMNZ 2075, 2078
Syngnathidae	*Novacampus norae* (Waite) EPFS KA500A, KA501B *Leptonotus blainvilleanus* (Eydoux & Gervais) EPFS K100C, K514C *Lissocampus filum* (Günther) EPFS K314A, K317A, K514B, K515N, KA499E; CM 1863, 1890 *Stigmatophora longirostris* Hutton EPFS K578A, KA499H *Solegnathus spinosissimus* (Günther) EPFS KA264A; CM 2082 *Hippocampus abdominalis* Lesson EPFS KA410, KA414
Scorpaenidae	*Helicolenus papillosus* (Bloch & Schneider) EPFS KA395; CM 775 *Scorpaena cardinalis* (Richardson) EPFS K271D, K513H
Triglidae	*Chelidonichthys kumu* (Lesson & Garnot) *Pterygotrigla picta* Waite EPFS KA320
Hoplichthyidae	*Hoplichthys haswelli* (McCulloch) EPFS KA304A, KA326
Congiopodidae	*Congiopodus leucopaecilus* (Richardson) EPFS K817, KA420; CM 634, 637; NMNZ 2018, 7910
Cottidae	*Neophrynichthys latus* (Hutton) NMNZ 2017
Serranidae	*Ellerkeldia huntii* (Hector) *Caesioperca lepidoptera* (Bloch & Schneider) EPFS K444A, KA499P; CM 902 *Calanthias allporti* Günther EPFS KA503A; CM 2082 *Anthias pulchellus* Waite EPFS KA325, KA464 *Polyprion moeone* Phillipps *Polyprion oxygeneios* (Bloch & Schneider)
Acanthoclinidae	*Acanthoclinus quadridactylus* (Bloch & Schneider) EPFS KO68A, K533A, K594A; CM 217, 1994; NMNZ 3955, 3957
Apogonidae	*Epigonus telescopus* (Risso) EPFS KA490E
Echeneidae	*Remora remora* (Linnaeus) EPFS KA411, KA499A
Carangidae	*Caranx georgianus* Cuvier *Trachurus declivis* (Jenyns)

	Seriola grandis Castelnau NMNZ 1290
	Naucrates ductor (Linnaeus) CM 900; NMNZ 5781
Bramidae	*Brama brama* (Bonnaterre) EPFS KA295, KA331; CM 461
Arripidae	*Arripis trutta* (Bloch & Schneider)
Emmelichthyidae	*Emmelichthys nitidus* Richardson NMNZ 2016
Sparidae	*Chrysophrys auratus* (Forster) NMNZ 1275
Pentacerotidae	*Pentaceros richardsonii* Smith EPFS KA270
Aplodactylidae	*Aplodactylus arctidens* Richardson NMNZ 5671
Cheilodactylidae	*Cheilodactylus macropterus* (Bloch & Schneider) EPFS K668B; NMNZ 1274
	Cheilodactylus spectabilis Hutton CM 500
Latridae	*Mendosoma lineatum* Guichenot in Gay EPFS KA046A (photo); CM 232
	Latridopsis ciliaris (Bloch & Schneider) EPFS K668A
	Latridopsis forsteri (Castelnau)
	Latris lineata (Bloch & Schneider) NMNZ 1288
Mugilidae	*Mugil cephalus* Linnaeus EPFS KA466
	Aldrichetta forsteri (Cuvier & Valenciennes) EPFS K001B, K057C
Labridae	*Pseudolabrus miles* (Bloch & Schneider) EPFS K271B
	Pseudolabrus celidotus (Bloch & Schneider) EPFS K412X, K513A, K515J, KA449; CM 611, 1908
	Pseudolabrus cinctus (Hutton) EPFS K271C
	Pseudolabrus fucicola (Richardson) CM 959
Odacidae	*Odax pullus* (Forster in Bloch & Schneider) EPFS KA375; CM 187
Mugiloididae	*Parapercis colias* (Bloch & Schneider) EPFS KA386, KA393
	Parapercis gilliesii (Hutton) EPFS KA016 (photo), KA327, KA490M: NMNZ 7350
Percophididae	*Hemerocoetes monopterygius* (Bloch & Schneider) EPFS K592A; CM 593
Creediidae	*Tewara cranwellae* Griffin NMNZ 7390
	Limnichthys rendahli Parrott EPFS KA499D
Leptoscopidae	*Crapatulus* sp. EPFS KA382
Uranoscopidae	*Kathetosoma giganteum* Haast NMNZ 1907
	Genyagnus monopterygius (Forster) EPFS K009D, KA196B
	Gnathagnus innotabilis Waite EPFS KA502J
Bovichthyidae	*Bovichthys variegatus* (Richardson) EPFS K513F, K515E; CM 596, 611, 1869
Nototheniidae	*Notothenia angustata* Hutton EPFS KA318, KA408
	Notothenia magellanica Bloch & Schneider CM 376

Tripterygiidae	*Gilloblennius tripennis* (Bloch & Schneider) EPFS K666A
	Forsterygion varium (Bloch & Schneider)
	Notoclinops bucknilli (Griffin)
	Notoclinus fenestratus (Bloch & Schneider) EPFS K513G, KA054A
	Notoclinus compressus (Hutton) EPFS K513G
	Tripterygion dorsalis Clarke EPFS K513E
	Helcogramma medium (Günther)
Clinidae	*Ericentrus rubrus* (Hutton) EPFS K036A, K513B, K515K, K577A; CM 548, 555, 611, 1640, 1763, 1927, 1988
	Cologrammus flavescens (Hutton) NMNZ 7626
Gempylidae	*Thyrsites atun* (Euphrasen) NMNZ 1276
	Rexea solandri (Cuvier & Valenciennes)
Trichiuridae	*Lepidopus caudatus* (Euphrasen) EPFS K357A, KA323, KA499N; CM 327
Scombridae	* *Katsuwonus pelamis* (Linnaeus) Phillipps (1921)
	* *Allothunnus fallai* Serventy EPFS Data Record
	Thunnus maccoyii Castelnau CM 470
	Scomber australasicus Cuvier & Valenciennes
	Gasterochisma melampus Richardson CM 581; NMNZ 7911
Centrolophidae	*Seriolella brama* (Günther)
	Seriolella punctata (Forster in Bloch & Schneider)
	Centrolophus niger (Gmelin) EPFS KA268A, KA502A
Stromateidae	*Hyperoglyphe antarctica* (Carmichael) NMNZ 5782
Tetragonuridae	*Tetragonurus cuvieri* Risso CM 1699; NMNZ 5780
Bothidae	*Arnoglossus scapha* (Bloch & Schneider) EPFS KA495P, KA495Q
Pleuronectidae	*Colistium guntheri* (Hutton) EPFS KA500B
	Rhombosolea plebeia (Richardson)
	Rhombosolea retiaria Hutton EPFS K587
	Peltorhamphus novaezeelandiae Gunther
	Pelotretis flavilatus Waite EPFS KA495M
Tetraodontidae	*Spheroides richei* (Freminville) NMNZ 3355
Balistidae	*Navodon scaber* (Forster) EPFS K605B, KA037 (photo), KA075A (photo); CM 589
Diodontidae	*Allomycterus whitleyi* Phillipps
Molidae	*Mola mola* (Linnaeus) EPFS KA330

DISCUSSION

Two of the species recorded in the checklist, the short-nosed lancetfish, *Alepisaurus brevirostris*, and the sleeper shark, *Somniosus* sp., are new records for the New Zealand fish fauna. Details of these specimens will be reported elsewhere.

This checklist is not considered to be exhaustive. Field observations and sampling methods were biassed in favour of large fish and shallow-water inhabitants. Some of the small, mesopelagic species were found only in the stomachs of predators. Intensive sampling of various habitats would certainly produce additional species.

Nevertheless, Kaikoura has a very diverse fish fauna for this latitude. One hundred and seventy-nine species were recorded from the region. This diversity is attributable to the wide range of habitats present in the region and to the variability of hydrological conditions. Substrates in shallow water range from mud to rock. Further, the sea-bed shelves to the edge of the continental shelf and then drops steeply into the Hikurangi Trench (Cullen and Brodie 1966). Depths in excess of 1,200 m are found only 6 km from shore. This combination of a range of substrates and a range of depths produces a variety of habitats.

The Kaikoura region lies near the Subtropical Convergence, where cold subantarctic and warm subtropical water masses mix. The Subtropical Convergence acts as an important biogeographical boundary: many fish species have their northern or southern limits along the South Marlborough coast. Seasonal shifts in the position of the Subtropical Convergence and the intrusion of warm subtropical water to varying degrees south produce a mixed fauna of warm and cold water species (Moreland 1958, Robertson *et al.* 1978). Seasonal migrants from the north appear to be most abundant on the South Marlborough coast in late summer and autumn (Shuntov 1970, 1971). During this study, yellowtail kingfish (*Seriola grandis*), jack mackerel (*Trachurus declivis*), trevally (*Caranx georgianus*) and snapper (*Chrysophrys auratus*) were seen at Kaikoura only during the summer and autumn. In 1979 yellowtail kingfish were abundant at Kaikoura as late as the end of May.

ACKNOWLEDGEMENTS

Preparation of this checklist involved many people. In particular I wish to thank Mr J. Moreland (National Museum of New Zealand) for identifying many species and checking the final list of names; Dr D.A. Robertson (Fisheries Research Division) for identifying many species; and Mr J. van Berkel (Edward Percival Field Station) for curating the EPFS fish collection. I am also grateful to the following people for their assistance with various stages of the work: Dr A.J. Bass and Mr C.D. Paulin (National Museum), Dr J.A. Colman and Mr G.D. James (Fisheries Research Division), and Professor J.A.F. Garrick and Dr P.H.J. Castle (Victoria University of Wellington) and Mr. G.A. Tunnicliffe (Canterbury Museum).

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